



National Weather Service

Storm Data and Unusual Weather Phenomena



July 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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WISCONSIN, Southeast

Rock County

Janesville **03** **0300CST** **0** **0** **2K** **Thunderstorm Wind**

An isolated severe thunderstorm's downburst winds leveled large trees and damaged some patio furniture

WIZ046>047-051>052-
056>060-062>072

Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane - Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha

04 **0300CST** **0** **0** **Excessive Heat**
05 **2300CST**

A two day heat wave over southcentral and southeast Wisconsin pushed utility companies to the limit, but there were no brownouts due to the fact that it was a Holiday weekend. Nonetheless, the excessive heat and humidity resulted in 40 people being treated for heat-related illness at local hospitals. In general, overnight minimum air temperatures were in the mid to upper 70s while daytime maximum air temperatures were in the lower to mid 90s. Dewpoints in the mid to upper 70s resulted in minimum heat indices of 80 to 85 at night and maximum heat indices of 102 to 110 during the afternoon hours. A new record high minimum air temperature of 79 was set in Milwaukee on July 4th, breaking the old record of 78 set back in 1921. In Madison, the minimum air temperature of 77 on July 4th tied the old record of set back in 1897. Normal maximum air temperatures are 82 degrees for this time of the year. The excessive heat was a contributing factor in the death of 73 year old man who died on July 6th (classified as an indirect death).

Washington County

West Bend **05** **2245CST** **0** **0** **2K** **Thunderstorm Wind**

Fond Du Lac County

Fond Du Lac **05** **2255CST** **0** **0** **2K** **Thunderstorm Wind (G58)**

Widely scattered severe thunderstorms generated powerful winds that leveled many large trees. Measured gusts peaked at 58 knots (67 mph) at the Fond du Lac Airport.

Fond Du Lac County

Peebles to St Peter **08** **2030CST**
2040CST **0** **0** **1K** **Thunderstorm Wind**

Sheboygan County

7 N Beechwood to Beechwood **08** **2040CST** **0** **0** **2K** **Thunderstorm Wind**

Fond Du Lac County

Fond Du Lac **08** **2059CST** **0** **0** **40K** **Lightning**

Fond Du Lac County

Fond Du Lac to 2 N Dundee **08** **2104CST**
2115CST **0** **0** **155K** **Thunderstorm Wind**

Sheboygan County

Sheboygan **08** **2105CST** **0** **0** **40K** **Thunderstorm Wind**

Sauk County

3 SE Reedsburg **08** **2110CST** **0** **0** **Hail (0.88)**

Iowa County

2 N Clyde **08** **2125CST** **0** **0** **1K** **Thunderstorm Wind**

Dodge County

Theresa **08** **2150CST** **0** **0** **1K** **Thunderstorm Wind**

Washington County

Germantown **08** **2200CST** **0** **0** **2K** **Thunderstorm Wind**

Waukesha County

Waukesha **09** **0032CST** **0** **0** **Hail (0.75)**



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					Killed	Injured	Property	Crops	

WISCONSIN, Southeast

Waukesha County

New Berlin to Waukesha	09	0100CST			0	0	2K		Lightning
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Waukesha County

Waukesha	09	0100CST 0400CST			0	0			Urban/Sml Stream Fld
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Several clusters of thunderstorms, some severe, rumbled across southcentral and southeast Wisconsin during the evening hours of the 8th into the early morning hours of the 9th. Many large trees and power lines were knocked down by the powerful thunderstorm winds. Scattered large hail was also reported. A church and a car in Fond du Lac (Fond du Lac Co.) sustained considerable wind damage. A power transformer on Highway 23 in the city of Fond du Lac took a direct lightning hit. In Sheboygan (Sheboygan Co.), several large tents were leveled in a Rotary Club event in the city park. About 2000 customers were without electrical power in the Germantown area of southern Washington County due to lightning striking power poles. In addition, lightning struck a TV antenna on a New Berlin residence and damaged the home's TV, electrical sockets, and computer. Rainfall amounts of 1.5 to 2 inches in the city of Waukesha (Waukesha Co.) resulted in urban flooding in the pre-dawn hours. Several roads were blocked by water levels reaching 1 to 2 feet in low spots.

Dodge County

Mayville	14	0430CST			0	0	20K		Lightning
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Lightning struck the roof of a residential home, resulting in a roof/attic fire.

Dane County

Oregon	17	0100CST 0800CST			0	0			Urban/Sml Stream Fld
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Several thunderstorms visited the Oregon area (Dane Co.) during the early morning hours. Total rainfall amounts were in the 5 to 6 inch range. Urban/small stream flooding was noted, but there was no damage. Many roads in the area had 1 to 2 feet of water covering them. Several were blocked by the high water levels. Local streams briefly exceeded their bankfull levels.

Iowa County

4 WNW Blanchardville to 2 N Blanchardville	20	1320CST			0	0	300K	50K	Thunderstorm Wind
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Lafayette County

2 N Argyle	20	1334CST			0	0			Hail (0.75)
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Green County

4 WNW New Glarus	20	1340CST			0	0	3K		Thunderstorm Wind
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Green County

2 S Monticello	20	1345CST 1600CST			0	0			Urban/Sml Stream Fld
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Green County

1 W Albany to 3 S Albany	20	1355CST 1405CST			0	0	225K		Thunderstorm Wind
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Rock County

2 SE Janesville	20	1413CST			0	0	35K		Lightning
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Rock County

2 SW Orfordville to 3 W Beloit	20	1425CST 1440CST			0	0	300K	50K	Thunderstorm Wind
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Rock County

Beloit	20	1430CST 1600CST			0	0			Urban/Sml Stream Fld
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Dodge County

Beaver Dam	20	2130CST			0	0	20K		Thunderstorm Wind
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WISCONSIN, Southeast

Sauk County

3 SW Baraboo	20	2235CST			0	0	8K	Lightning
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Milwaukee County

West Allis	20	2320CST			0	0	75K	Lightning
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Thunderstorms packing destructive winds, large hail, heavy rainfall, and lightning strikes pummelled southern Wisconsin in the afternoon and nighttime hours. The extreme southeast corner of Iowa County just west and north of Blanchardville experienced damaging winds. Three farms had significant damage. Altogether, 2 barns were destroyed, and one damaged. In addition, a corn crib, machine shed, and mechanical equipment were damaged. One of the farm's home sustained extensive damage after a large tree crashed through it. Eight calves were crushed in one of the destroyed barns, along with some hay crop. About 150 large trees were flattened. The severe storms continued southeast through Green county in the afternoon. About 100 livestock injuries/deaths occurred in Green County when 3 barns were destroyed by the powerful winds near Albany and a family of 3 were trapped in their vehicle due to fallen power line poles. 1.15 inches of rain fell in 15 minutes near New Glarus. The heavy rains resulted in urban/small stream flooding in and around Monticello (Green Co.). Water levels on some roads reach 6 to 12 inches. In neighbouring Lafayette county three-quarter inch hail was observed at Blanchardville and in southwest Rock county 3 farms sustained extensive damage to several buildings. A barn was downed west of Beloit and a few corn fields were flattened. Lightning struck a residential home in Rock county, destroying the garage and contents and causing heat/smoke damage to the home. After sunset lightning caused an attic fire near Baraboo in Sauk county and wind downed numerous trees near Beaver Dam in Dodge county, damaging the roofs of 6 homes. Lightning struck two buildings in West Allis (Waukesha Co.): a Fire Department building sustained communications and computer equipment damage; and a residential home had considerable fire damage to it roof/attic and 2nd story. In all, 10,000 customers were without power in southcentral and southeast Wisconsin due to the wind or lightning damaging power lines.

Sauk County

Lake Delton	20	1830CST 2000CST			0	0		Urban/Sml Stream Fld
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Dodge County

North Portion	20	2130CST 2300CST			0	0	20K	Flash Flood
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Columbia County

Poynette to Pardeeville	20 21	2215CST 0100CST			0	0	5K	Urban/Sml Stream Fld
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Waukesha County

Pewaukee	20 21	2300CST 0200CST			0	0	10K	Flash Flood
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Washington County

Hartford to 5 E West Bend	20 21	2325CST 0300CST			0	0	30K	Flash Flood
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Dodge County

North Portion	21	0000CST 0400CST			0	0	30K	Flash Flood
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Milwaukee County

Countywide	21	0030CST 0400CST			0	0	40K	Flash Flood
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A series of thunderstorms feeding off of a humid tropical-like airmass repeatedly trained across portions of southcentral and southeast Wisconsin during the late evening of the 20th into the early morning hours of the 21st. The net result was widespread flash flooding. There were numerous reports of shoulder washouts of roads and basement flooding. There were also many reports of stalled vehicles due to high water levels on many roads. One rainfall observer located 6 miles northeast of Beaver Dam in Dodge county reported 5.0 inches of rain between 2030CST and 2350CST on the 20th, with a total amount of 6.08 inches through 0620CST on the 21st.



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WISCONSIN, Southeast

Northern Dodge County was hit by 2 separate flash flood rounds. Numerous roads had standing water 3 to 5 feet deep and some country roads experienced shoulder washouts. A stretch of railroad tracks were washed out in Iron Ridge. Elsewhere, rainfall rates of 1 to 1.5 inches an hour were reported in Washington county, and at West Bend 4.10 inches was measured from 2300CST on the 20th to 0700CST on the 21st.

Similar rainfall rates were reported in Milwaukee county resulting in the Root River in the southern part of the county rising out of its banks. The Menomonee river in the Wauwatosa area (Milwaukee Co.) crested at 13.03 feet at 0145CST on the 21st, or 2.03 feet above flood stage. In the city of Milwaukee, a TV station reported 2.66 inches of rain between 2300CST on the 20th to 0100CST on the 21st. Law enforcement officials reported 1 to 2 feet of water on many roads, including the Interstate Highways, in and around the city of Milwaukee. In neighboring Waukesha County, 3 to 4 feet of standing water was reported on Interstate 94 near Pewaukee! Homes in Poynette and Pardeeville in Columbia county had homes with flooded basements, and 1 to 2 feet of standing water was reported on low spots of Highway 12 and other area roads near Lake Delton in Sauk County. Rainfall totals of 2 to 3 inches were noted around Lake Delton. Elsewhere, the Rock River at Waupan in Dodge County peaked 14 inches above its flood stage later on during the afternoon hours of the 21st.

WIZ057>060-063>064-
066-069>072

Columbia - Dodge - Washington - Ozaukee - Dane - Jefferson - Milwaukee - Rock - Walworth - Racine - Kenosha

23	0200CST	0	0	Excessive Heat
24	2000CST			

Hot, muggy air settled over portions of southcentral and southeast Wisconsin in between rounds of thunderstorms. Early morning heat indices were around 80, and they rose to 105 to 110 during the afternoon hours. Maximum air temperatures in the afternoon were in the lower to middle 90s and afternoon dewpoints were in the lower to mid 70s. Nighttime minimum air temperatures were generally in the lower 70s. The heat and humidity forced a near record demand for electricity, resulting in brownouts that left about 5000 customers without power for several hours on the 23rd, and 7000 customers without power on the 24th.

Green Lake County						
Markesan	23	1245CST	0	0		Hail (0.75)
Washington County						
2 NW Slinger	23	1300CST	0	0		Funnel Cloud
Dane County						
Madison	23	1320CST	0	1		Lightning
Dodge County						
Beaver Dam to Lowell	23	1334CST 1352CST	0	0	2K	Thunderstorm Wind
Dane County						
Cottage Grove	23	1340CST	0	1		Lightning
Columbia County						
Rio	23	1345CST	0	0	2K	Thunderstorm Wind
Jefferson County						
1 S Watertown	23	1408CST	0	0		Thunderstorm Wind (G52)
Columbia County						
5 W Columbus	23	1430CST	0	0	1K	Thunderstorm Wind
Dane County						
Madison Truax Arpt	23	1439CST	0	0		Hail (0.75)
Dane County						
Belleville	23	1440CST	0	0	1K	Thunderstorm Wind
Dodge County						
Richwood	23	1440CST	0	0		Hail (0.75)
Green County						
5 E Dayton to Brodhead	23	1445CST 1500CST	0	0	25K	Thunderstorm Wind



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WISCONSIN, Southeast

Jefferson County							
Ft Atkinson	23	1449CST			0 0	2K	Thunderstorm Wind
Ozaukee County							
Grafton	23	1455CST			0 0	5K	Thunderstorm Wind
Rock County							
3 W Union	23	1455CST			0 0	1K	Thunderstorm Wind
Rock County							
Janesville	23	1510CST			0 0	1.5K	Thunderstorm Wind
Dane County							
3 NW Stoughton	23	1521CST			0 0	1K	Thunderstorm Wind
Milwaukee County							
Milwaukee	23	1530CST			0 0	30K	Thunderstorm Wind
Racine County							
Waterford	23	1533CST			0 0	2K	Thunderstorm Wind
Walworth County							
Walworth to Lake Geneva	23	1536CST 1550CST			0 0	2K	Thunderstorm Wind (G57)
Kenosha County							
1 SW Twin Lakes	23	1555CST			0 0	3K	Thunderstorm Wind
Rock County							
Newville	23	1555CST			0 0	1K	Thunderstorm Wind
Racine County							
North Bay	23	1615CST			0 0	3K	Thunderstorm Wind

Scattered pre-dawn thunderstorms and a daytime mixture of temperatures in the lower 90s and dewpoints in the lower to mid 70s primed the atmosphere for a round of severe weather across southcentral and southeast Wisconsin. During the afternoon hours of the 23rd several short lines of severe thunderstorms moved east/southeast at 35 mph dumping large hail and torrential rains, and producing damaging wet microburst winds. Numerous large trees were blown over and many power lines were knocked over. A measured peak wind gust of 57 knots (66 mph) was recorded in Lake Geneva (Walworth Co.). Large hail (7/8 inch) was reported along with damaging winds that raked the Beaver Dam to Lowell area of Dodge County. In Madison (Dane Co.), lightning injured a woman, and also struck and injured a boy on a bike in Cottage Grove. A farm garage building in northeast Green County was blown down by the powerful thunderstorm winds. In the city of Milwaukee (Milwaukee Co.) 1 home and 3 cars sustained wind damage.

Dane County							
Madison	25	1832CST			0 0	15K	Thunderstorm Wind
Dane County							
Madison	25	1845CST 2030CST			0 0	15K	Flash Flood
Rock County							
Edgerton	25	1845CST 1945CST			0 0	1K	Thunderstorm Wind
Rock County							
3.5 S Clinton	25	1910CST			0 0	1K	Thunderstorm Wind

An isolated cluster of severe thunderstorms developed north of the Madison area (Dane Co.) and proceeded to move southeast at about 15 mph. The storms produced wet microbursts that levelled trees and stop signs on the southside of Madison. Two vehicles were damaged by tree branch debris. It was the same story in Rock County where trees were toppled by powerful winds in Edgerton and south of Clinton.

The slow moving thunderstorms also dumped torrential rains at the rate of 1 to 2 inches per hour. The net result was a brief flash



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WISCONSIN, Southeast

flood on the southside of Madison. Several roads were closed due to water levels of 3 to 5 feet. Some erosion of roadside banks was noted and several cars stalled in the deep water. Unofficial rainfall observations indicate that 4 inches of rain fell in less than 2 hours from Madison to Stoughton (Dane Co.).

Sauk County

3 NE Baraboo

26 0250CST 0 0 30K Thunderstorm Wind

An isolated severe thunderstorm's powerful downburst winds tore off 3/4ths of a farm home's roof and levelled many trees

Columbia County

**3 SE Portage to
Wyocena**

26 0300CST 0 0 5K 50K Thunderstorm Wind
0310CST

The Sauk County severe storm pulsed up once again and flattened many large trees and some corn crop.

Lafayette County

5 N Darlington

28 0910CST 0 0 Hail (1.00)

**WIZ046>047-051>052-
056>060-062>072**

**Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane -
Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha**

29 0800CST 8 0 Excessive Heat
31 0600CST

The most intense heat wave since the killer heat wave of July 13-14, 1995, struck southcentral and southeast Wisconsin at the end of July, 1999. This most recent heat wave was responsible for directly killing 8 people (heat was the major cause of death), and indirectly killing (heat was a contributing factor) an additional 6 people. Most of these deaths occurred in or near the city of Milwaukee (Milwaukee Co.), possibly due to the fact that Milwaukee registered a minimum air temperatures of 70 degree or higher for the last 11 days of July. In addition, at least 150 people were treated at local hospitals for heat-related exhaustion or dehydration.

Meteorologically, high pressure over the southeast U.S. pushed hot, muggy air into southern Wisconsin. Additional moisture was added to the atmosphere by evaporation of moisture from the Mid West corn belt. In fact, the dewpoint at Milwaukee Mitchell Field reached 82 degrees at 1200CST on the 30th, tying the record high dewpoint set back on July 4, 1977. Kenosha (Kenosha Co.) also hit 82 for a maximum dewpoint reading, while Madison (Dane Co.) came in with 79. On July 29th, maximum air temperatures ranged from 93 at the Wisconsin Dells (Columbia Co.) to 99 at Mt. Mary College in Milwaukee County. Minimum air temperatures for the morning of July 30th ranged from 68 in Juneau (Dodge Co.) to 76 at the Charmany Farm in Madison. Maximum air temperatures for July 30th ranged from 95 in Juneau to 104 in Kenosha. The 104 degrees in Kenosha established a new all-time record for that location! Milwaukee topped out at 95 and 99 for the 29th and 30th, respectively, while Madison topped out at 93 and 97. Minimum air temperatures for the morning on the 31st were in the lower 70s.

Thanks to the high dewpoint levels, heat index values during the afternoon hours on the 29th and 30th ranged from 110 to 115. However, on the 30th, the city of Fond du Lac (Fond du Lac Co.) had heat indices of 116 to 119 for 3 hours, the city of Racine (Racine Co.) had heat indices of 115 to 119 for 2 hours, and the city of Kenosha had readings of 115 to 125 for 6 hours. Minimum heat indices during the nighttime hours were around 80.

In Milwaukee County, the 4 direct heat deaths were: male 45, male 54, male 66, and female 73, all in their home or apartment. There were 6 other indirect heat-related deaths in Milwaukee County; again, all in their home. Other direct heat-related deaths were: in the city of Fond du Lac /male 65/, in Madison /male 53/, in the city of Racine /male 59/, and in the city of Waukesha (Waukesha Co.) /female 79/, all in their home. M65PH, M53PH, F79PH, M45PH, M54PH, M66PH, F73PH, M59PH



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WISCONSIN, Southeast

Rock County

Beloit	29	0940CST			0	0	3K		Thunderstorm Wind
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An isolated severe thunderstorm generated strong winds which pushed over a few large trees in and near Beloit (Rock Co.).

Fond Du Lac County

Fond Du Lac	30	2127CST 2130CST			0	0	3K		Thunderstorm Wind (G60)
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An isolated thunderstorm generated a wet microburst that levelled some large trees. Peak wind gust was measured.

Sheboygan County

Greenbush to Sheboygan Falls	30	2315CST 2325CST			0	0	20K		Thunderstorm Wind
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An eastward moving line of thunderstorms in central Wisconsin generated a well-defined (on WSR-88D imagery) gust front which pushed some 5 to 15 miles ahead of the surface position of the associated rain. The counties of Sauk, Marquette, Green Lake, and Fond du Lac reported wind gusts of 35 to 43 knots (40 to 50 mph), however the outflow winds increased in strength after the gust front pushed into Sheboygan County. Many large trees and some power lines were pushed over from the Greenbush to Sheboygan Falls area. Peak winds gusts in Sheboygan county were estimated to be about 50 to 60 knots based on the damage reports.